7. NIGHTCAP VILLAGE BUSHFIRE MANAGEMENT PLAN

Cardno - 2006

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Engineering the Future

Nightcap Urban Village

Bushfire Management Plan

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NIGHTCAP URBAN VILLAGE
BUSHFIRE MANAGEMENT PLAN

TABLE OF CONTENTS

EXECUTIVE SUMMARY 1

1. INTRODUCTION 2

1.1 Site Description 2
1.2 Development Description 3

2. BUSHFIRE PROTECTION ASSESSMENT 4

2.1 Vegetation Assessment 4
2.1.1 Vegetation Adjoining the Development Envelope 4
2.1.2 Vegetation Within the Development Envelope 5
2.2 Slope Assessment 6
2.3 Setback Assessment 6
2.3.1 Overview 6
2.3.2 Application 7

3. BUSHFIRE MANAGEMENT PLAN 9

3.1 Asset Protection Zone Management and Maintenance 9
3.2 Buildings and Structures 10
3.3 Access 10
3.4 Water Supply 11
3.5 Landscaping Within the Development 11
3.6 General Maintenance 11

LIST OF FIGURES

Figure 1 Aerial Photograph
Figure 2 Excerpt from the Tweed Shire Bushfire Prone Land Map 1 of 2
Figure 3 Proposed Plan of Development
Figure 4 Proposed Bushfire Management Measures

EXECUTIVE SUMMARY

This Bushfire Management Plan has been prepared by Cardno on behalf of Peter Van Lieshout in respect of Lot 3 on DP771335 and Lot 121 on DP134446, located on the Uki-Kyogle Road, Tweed Shire. This plan has been prepared in accordance with the provisions of the *Rural Fires Act 1997* and, more specifically, in accordance with:

- the New South Wales Rural Fire Service's *Planning for Bushfire Protection: A Guide for Councils, Planners, Fire Authorities, Developers and Home Owners*; and

- the *Tweed Shire Council Development Control Plan No. 16 – Subdivision Manual.*

The objectives of this report are to provide an analysis of the potential bushfire hazards of the site and its surrounds and to provide management strategies designed to mitigate the potential threat of bushfire.

This management plan provides:

1. In Section 2.0, an assessment of the vegetation and average slopes of the land within and external to the development envelope and recommendations concerning the appropriate type of development setbacks from potential bushfire threats.

2. In Section 3.0, a bushfire management plan which contains management specifications relating to the establishment of Asset Protection Zones, the appropriate standard to which buildings and structures should be constructed, the provision of water supply, the appropriate plant species to use as part of any landscaping within the site and general maintenance duties that should be undertaken by future residents to further reduce the potential for fires to spread into their property.

With respect to the latter point above, it is relevant to note that the Asset Protection Zones which are to be located along the western, northern and north-eastern boundaries of the Village zone are to be located external to the site within parcels of land which owned by Peter Van Lieshout. This provides an opportunity to ensure the ongoing function and maintenance of these external Asset Protection Zones is guaranteed in perpetuity. The areas encompassed by the external Asset Protection Zones are to be included as part of the Nightcap Rural Village development application, thereby enabling these specific bushfire management measures to achieve compliance with the intent and purpose of Section 4.2.1 of the Tweed Shire Council Development Control Plan No. 16 – Subdivision Manual which requires that "*asset protection zones are to be placed wholly within the subdivision they are intended to protect*".

1. INTRODUCTION

This Bushfire Management Plan has been prepared by Cardno on behalf of Peter Van Lieshout in respect of Lot 3 on DP771335 and Lot 121 on DP134446, located on the Uki-Kyogle Road, Tweed Shire ("the site"). This plan has been prepared in accordance with the New South Wales Rural Fire Service's *Planning for Bushfire Protection: A Guide for Councils, Planners, Fire Authorities, Developers and Home Owners* ("the RFS Guide"). This Bushfire Management Plan also addresses the bushfire management requirements contained within the *Tweed Shire Council Development Control Plan No. 16 – Subdivision Manual*.

1.1 Site Description

The site is located on the Uki-Kyogle Road, approximately 12km southwest of Uki and is situated on the Tweed River in a valley between Mt Warning and the Nightcap Ranges.

The site is bound:

- to the south by Uki-Kyogle Road, cleared land that is to support a rural residential development and to the south-west by a native plantation forest;
- to the north by cleared and partially cleared land and existing rural dwellings;
- to the east by cleared and partially cleared land and the Uki-Kyogle Road; and
- to the west by intact bushland that occurs on steep, easterly facing slopes.

A recent aerial photograph of the site is presented as Figure 1.

The vegetation across the majority of the site is dominated by pasture grassland with scattered clumps of trees. The majority of the site, including the clumps of trees, is highly disturbed, a consequence of past and recent vegetation clearance events and by the widespread invasion of exotic flora, principally Camphor laurel (*Cinnamomum camphora*). The site also supports riparian vegetation that fringes a section of the Tweed River which traverses the site's southern sectors.

The site has a "2(d) Village" designation pursuant to the *Tweed Local Environmental Plan 2000* ("*Tweed LEP*") which is classified as a "Residential" area.

The site is mapped as supporting *Vegetation Category 1* and *Buffer Zones (100m and 30m*) pursuant to Tweed Shire Council's *Tweed Shire Bush Fire Prone Land Map 1 of 2*. An excerpt of this mapping is presented as Figure 2. It is relevant to note that lawful vegetation clearance undertaken within the site has largely reduced the extent of vegetation coverage and, in this regard, the bushfire prone land mapping is no longer indicative of actual on-ground conditions. In this respect, reference is made to Figure 1 which illustrates the current extent of vegetation coverage within and external to the proposed development envelope.

1.2 Development Description

The proposed plan of development for the site, presented in Figure 3 would create the Nightcap Rural Village, which would consist of:

- Village Lots;
- Village Housing precinct;
- Mixed Village precinct;
- Tourism and Special Uses areas;
- Open Space areas (Village Green, Sports Display, Market Garden);
- Environmental Open Space;
- two centrally located dams;
- Parking; and
- Rehabilitation Areas.

The following development activities, of relevance to bushfire management issues, have already taken place within the site.

- The majority of the site has been cleared of vegetation and currently supports pasture grasslands with scattered clumps of forest trees and a narrow riparian corridor associated with the Tweed River.
- The provision of tracks which provide access from the Uki-Kyogle Road through the site to bushland situated to the west and a bituminised driveway associated with rural development to the north.

2. BUSHFIRE PROTECTION ASSESSMENT

Under current NSW legislation, the Rural Fire Service (RFS) has the responsibility of assessing the bushfire risk for urban development, and determining appropriate building setbacks and development controls to be applied. It does so in the context of the RFS Guide, which provides relevant information on bushfire risk in respect of vegetation type, topography and form of development.

Given the form of development proposed for the site (i.e. a rural village) and its proximity to existing bushland within the locality, it is necessary to undertake a Precinct Level Assessment in accordance with the specifications provided within Appendix 2 of the RFS Guide. Such an assessment is required to order to determine whether the development is bushfire-prone and, if so, the appropriate nature and width of any setbacks that are to be incorporated into the development layout. In order to complete this assessment, it is necessary to undertake the following procedures.

(a) Determination of vegetation distance, type and class, as follows:

  (i) identification of all vegetation in each direction from the site for a distance of 140m:

  (ii) consultation of the RFS Guide's Figure A2.2 and Table A2.1 to determine the vegetation type which predominates; and

  (iii) selection of the predominant vegetation group (1 to 3) as described in Table A2.1 of the RFS Guide.

(b) Determination of the average slope of the land between the Predominant Vegetation Class and the site (slope classes are detailed in section A2.2.5 of the RFS Guide).

(c) Consultation of Tables A2.2–2.4 within the RFS Guide and determination of the appropriate setbacks for the assessed land use, vegetation group and slope range.

These analyses are provided in Section 2.1 to 2.3 herein.

2.1 Vegetation Assessment

2.1.1 Vegetation Adjoining the Development Envelope

An assessment of vegetation within the vicinity of the site was completed between the 24th and 25th of January 2006. The aims of the survey were to:

- collate specific information on the vegetation types that occur within 140m of the site; and

- determine the equivalence that these vegetation types have to the Vegetation Groups (i.e. 1 to 3) specified in Figure A2.2 and Table A2.1 of the RFS Guide.

With respect to the above the following is noted.

1. Vegetation west of the site is mapped as a Grey Ironbark/White mahogany/Grey gum open forest complex pursuant to Map 2A0: Vegetation Type of the *Tweed*

Vegetation Management Strategy – August 2004. Site assessment confirmed the presence of this vegetation and noted the presence of a mid-dense to dense midstorey and understorey characterised by a variety of wet sclerophyll and rainforest plant species. It is also relevant to note that this vegetation community does not extend along the entire extent of the site's western boundary, with previously cleared and regularly slashed land abutting the western boundary in its central portion (adjacent to an existing track) and in its southern extent (to the north and south of the Tweed River). In general terms, the wet sclerophyll forest that borders the site's western boundary is considered to be analogous to Vegetation Group 1 pursuant to Table A2.1 of the RFS Guide. The cleared land that abuts the central and south-western boundary of the site is considered to be analogous to Vegetation Group 3 pursuant to Table A2.1 of the RFS Guide.

2. Vegetation south of the site is characterised by a thin band of wet sclerophyll forest associated with a road reserve, a native forest plantation and cleared grasslands associated with a proposed rural residential community. It is relevant to note that although the native forest plantation and the cleared land are physically separated from the site by the Uki-Kyogle Road, there is only slight canopy separation between the thin band of wet sclerophyll forest associated with the road reserve and the native plantation. In this respect, it is considered that the Uki-Kyogle Road would have little impact in terms of slowing or halting an approaching fire-front from the south if such a fire was to crown. The thin band of wet sclerophyll forest and the native forest plantation are considered to be analogous to Vegetation Group 1 and the cleared land is considered to be analogous to Vegetation Group 3 pursuant to Table A2.1 of the RFS Guide.

3. Vegetation to the east and north of the site is characterised by predominantly cleared grasslands that support scattered clumps of vegetation and isolated trees. In this respect, the predominant vegetation type adjoining the site along these two boundaries is considered analogous to Vegetation Group 3 pursuant to Table A2.1 of the RFS Guide.

The distribution of vegetation categorised under the RFS Guide's grouping strategy that adjoins the development envelope is presented in Figure 4.

2.1.2 Vegetation Within the Development Envelope

It is relevant to note that, under the proposed plan of development (refer Figure 3) clumps of forest trees within the northern portions of the site are to be retained. In this respect, Section A2.3.4 in Appendix 2 of the RFS Guide states that "*small remnant forest areas (less than 1 ha) may be considered equivalent to specifications in Vegetation Group 3*". Although these clumps of forest trees are not considered to constitute a significant bushfire threat, it is recognised that there exists the potential for these clumps to ignite as a consequence of air-born ember attack from approaching fire fronts outside of the site's boundaries. As such, these retained clumps are appropriately categorised as low-risk bushfire hazards (i.e. Vegetation Group 3).

The narrow riparian corridor that fringes the Tweed River is to be retained and rehabilitated through enhancement plantings and, where relevant, widened, as part of the proposed development. This riparian corridor is considered analogous to the closed forest description provided on Figure A2.2 and in Table A2.1 of the RFS Guide and, as such, constitutes Vegetation Group 3.

The distribution of vegetation categorised under the RFS Guide's grouping strategy within the development envelope is presented in Figure 4.

2.2 Slope Assessment

The site is situated over steep and undulating land in a valley formed between the Mount Warning and Nightcap National Parks. Slopes on land adjoining the site's four boundaries are described as follows.

1. Land to the west is situated on steep gradients (i.e. >5°) and occurs upslope of the site.
2. Land south of the Tweed River is situated upslope of the site on gradients >5°.
3. Land to the east is situated on undulating land that slopes down to the Tweed River such that land along the site's south-eastern boundary occurs upslope on gradients >5°, and land along the site's north-eastern boundary occurs downslope of the site on gradients >10-15°.
4. Land to the north is situated on undulating land that slopes down to a natural drainage channel, part of which flows through the north-eastern corner of the site. It is also relevant to note that a large constructed dam occurs slightly upslope of the site and contributes to another natural drainage channel that flows through the north-western and central-northern sections of the site. In general terms, land to the north occurs upslope of the site on slopes varying between 0-5° and >5°.

2.3 Setback Assessment

2.3.1 Overview

Minimum specifications for setbacks or Asset Protection Zones (APZs) for residential developments in bushfire prone areas are provided in Tables A2.2 and A2.4 of the RFS Guide. It is considered that the minimum specifications provided in Table A2.3 are not applicable to the proposed Nightcap Rural Village, as it is not being developed specifically to provide one of the following "Special Protection" purposes:

- housing for older people or people with a disability;
- schools, institutions for mentally and /or physically disabled;
- residential aged care facilities (nursing homes & hostels); or
- child care facilities.

With respect to the above, an APZ is defined in the RFS Guide as *an area surrounding a development managed to reduce the bushfire hazard to an acceptable level*...[and] *to protect human life, property and highly valued public assets and values*. An APZ consists of an Inner Protection Area (IPA) and an Outer Protection Area (OPA). The width of an APZ varies with vegetation type, slope and construction level.

An IPA is described as the inner component of an APZ, consisting of an area maintained to minimal fuel loads and comprising a combination of perimeter road, fire trail, rear yard or reserve, so that a fire path is not created between the hazard and the building.

An OPA is described as the outer component of an asset protection zone, where fuel loads are maintained at a level (usually less than 8 t/ha) where the intensity of an approaching bushfire would be significantly reduced.

It is relevant to note that Section 4.2 of the RFS Guide, which outlines provisions that should be taken into consideration under s.79C of the *Environmental Planning and Assessment Act 1979* when a development application is to be determined for a residential subdivision, and which specifically addresses APZs, states:

> *Bushfire protection measures that are essential to a development must occur on the site of the proposed development unless the most exceptional circumstances apply. This has been supported by various court rulings, including* Scott Revay & Unn v.Ku-ring-gai Municipal Council 1994, Williams v Blue Mountains City Council 1995 and Spargo v Wollongong City Council 1997.

It is also relevant to note that Section 4.2.1 of the Tweed Shire Council Development Control Plan No. 16 – Subdivision Manual also states that "*asset protection zones are to be placed wholly within the subdivision they are intended to protect*".

2.3.2 Application

The APZs proposed along the western, northern and north-eastern boundaries of the Village zone are to be located external to the site within parcels of land which, like the site, are owned by Peter Van Lieshout. The ownership of the land is of relevance as it provides an opportunity to ensure the ongoing function and maintenance of the external APZs is guaranteed in perpetuity. It is also relevant to note that the areas encompassed by the external APZs are to be included as part of the Nightcap Rural Village development application, thereby enabling these specific bushfire management measures to achieve compliance with the intent and purpose of Section 4.2.1 of the Tweed Shire Council Development Control Plan No. 16 – Subdivision Manual which requires that "*asset protection zones are to be placed wholly within the subdivision they are intended to protect*".

The approximate locations of the development setbacks (i.e. APZs) to Group 1 and 3 vegetation adjoining and within the development site are presented in Figure 4. It is not considered necessary to establish an APZ along the south-eastern boundary of the site, as, in this respect, the Uki-Kyogle Road will function as an APZ. Details relating to the required setbacks of development from Group 1 and 3 vegetation within and adjoining the site are provided as follows.

<u>Group 1 Vegetation APZ</u>

Pursuant to Table A2.2 of the RFS Guide, the minimum width of an APZ located between a development boundary and Group 1 vegetation situated upslope of a development boundary on gradients greater than 5° is 20m. Table A2.2 also specifies that such an APZ should be comprised of a 20m wide IPA and that there is no need to provide an OPA. It is relevant to note that this setback is based upon the need for buildings constructed adjacent to the APZ to conform with a Level 3 construction standard pursuant to *Australian Standard AS 3959 – 1999 Construction of buildings in bushfire-prone areas* ("*AS 3959 – 1999*"). In this respect, Level 3 construction pertains to the category of extreme bushfire attack. Appendix 2 of the RFS Guide states that if it is intended to construct to a lower bushfire protection standard (i.e. Level 1, which pertains to the category of medium bushfire attack, or Level 2, which pertains to the

category of high bushfire attack) or to no specific bushfire protection standard, then an APZ of greater width will be required.

Setbacks to Group 1 vegetation adjoining the development will be required along the site's south-western and north-western boundaries and are shown in Figure 4.

Group 3 Vegetation APZ

Pursuant to Table A2.4 of the RFS Guide, a minimum separation distance of 20m (managed understorey or grasses) should be established between a development boundary and Group 3 vegetation on all slopes. Table A3.3 of the RFS Guide does not require that a specific standard, pursuant to *AS 3959 – 1999*, be adopted for buildings constructed adjacent to APZs established between development and Group 3 vegetation.

Setbacks to Group 3 vegetation adjoining the development will be required along the site's eastern and northern boundaries. Setbacks to Group 3 vegetation within the development will be required along the Tweed River and around retained clumps of vegetation. Group 3 vegetation APZs are illustrated in Figure 4.

With respect to the development setbacks from the clumps of forest trees and riparian vegetation to be retained within the site the following is noted.

1. It is recognised that as the site has a "Village" designation pursuant to the *Tweed LEP* and, as such, vegetation clearance within the site is exempt from the provisions of the *Native Vegetation Act 2003*. Whilst it is recognised that other regulations (i.e. the *Threatened Species Conservation Act 1995, Environmental Planning and Assessment Act 1979*, *Fisheries Management Act 1994* and *Rivers and Foreshores Improvement Act 1948*) would constrain the complete removal of vegetation from within the site, it is acknowledged that the possibility exists that some of the forested clumps may be removed as a consequence of the development. In the instance that these or the other communities identified as Group 3 vegetation within the site are removed, there would be no requirement to establish a 20m wide APZ in the locations indicated in Figure 4.

2. Given the form of development proposed for the site, it would be appropriate to establish a 6m wide fire-trail as close as possible to the vegetation retained within the site (refer Figure 4). These fire-trails should be constructed in a manner responsive to site topography and, where practicable, should have:

   a) a formed width and gradient;

   b) erosion control devices to local government standards; and

   c) provisions for passing bays and turning areas for fire-fighting appliances.

The fire-trail should be regularly slashed and, where practicable, be of a form suitable to cater for the deployment of fire-fighting vehicles. Provided such fire-trails are established and maintained, it is considered that it would be suitable to construct non-habitable structures within the balance of the APZ. However, in this regard, it is recommended that the RFS be consulted about the practicalities of such a measure and about the whether there would be a need to construct such structures to a certain standard pursuant to *AS 3959 – 1999*.

3. BUSHFIRE MANAGEMENT PLAN

Subdivision of land for residential use in bush fire prone areas constitutes "integrated development" and requires authorisation under s.100B of the *Rural Fires Act 1997* in respect of bush fire safety. In this respect, the *Tweed Shire Council Development Control Plan No. 16 – Subdivision Manual* requires that a Bushfire Management Plan must accompany the development application for subdivision and must:

- ensure that streets and fire trails are designed, located and connected to allow safe and efficient movement for emergency vehicles and evacuation;
- provide appropriate perimeter roads or reserves to circumscribe the hazard side of the development with appropriately owned and managed asset protection zones between the source of bushfire risk and urban development;
- design lots to facilitate the siting and design of houses incorporating bushfire protection measures; and
- comply with the provisions of *Development Design Specification D10 - Bushfire Protection*.

In this regard, the following bushfire management measures are recommended for implementation as part of the proposed development.

3.1 Asset Protection Zone Management and Maintenance

In order to achieve compliance with the purposed and intent of the RFS Guide, APZs should be located in those areas of the site indicated in Figure 4.

A network of access roads is to be established within the development envelope. An indicative layout of the roadway system proposed is illustrated in Figure 3. The precise alignments of these roadways and walking trails within the development are to be determined during the detailed design phase of development. Irrespective of this, the intent is to use these roadways and walking trails as fire-breaks and fuel reduced zones and, as such, they will also function to inhibit movement of fire into the development envelope.

Where roadways are not located within the defined APZs, fire-trails should be established as close as possible to the adjoining bushfire hazard within all APZs to facilitate the deployment of fire-fighting units. It is recognised that the site is situated over steep and undulating land and that, in this respect, it will not be possible to establish fire-trails within all APZs that will be of a form suitable to cater for the deployment of fire-fighting units. In this regard, fire-trails should be constructed in a manner responsive to site topography and, where practicable, should have the following minimum design characteristics:

a. a minimum cleared width of 6 metres;
b. a formed width and gradient to local government standards;
c. unrestricted vehicular access at each end; and
d. passing bays and turning areas for fire-fighting appliances.

The balance of the APZs are to consist of a fuel reduced zone within which existing vegetation is to be selectively cleared and maintained in a condition that will inhibit the movement of fire from adjacent bushland into the development. In this respect vegetation within the fuel reduced zone shall be selectively cleared and maintained to the following standards:

a. all trees with a stem diameter in excess of 150mm are to be retained, unless their removal is required to facilitate the establishment of fire trails;
b. all trees with a stem diameter less than 150mm and all shrubs are to be removed;
c. all dead trees and accumulated combustible debris are to be removed; and
d. the ground cover vegetation, and any regrowth of trees and shrubs, is to be maintained to a height of not more than 150mm.

3.2 Buildings and Structures

As stated in Section 2.3.2, there is a requirement for any dwellings and other structures established immediately adjacent to the 20m wide APZ that separates Group 1 vegetation from the development boundary to conform to a Level 3 construction standard pursuant to *AS 3959 – 1999*. If a lower or no construction standard is adopted, there will be a need, pursuant to the recommendations provided within Appendix 2 of the RFS Guide, to incorporate wider APZs between the Group 1 vegetation and the development boundary.

Table A3.3 of the RFS Guide does not require that a specific standard, pursuant to *AS 3959 – 1999*, be adopted for buildings constructed adjacent to APZs established between development and Group 3 vegetation. The RFS should be consulted about the need to construct structures to a certain standard pursuant to *AS 3959 – 1999* if such structures are proposed:

a. within those APZs to be established around the perimeter of vegetation retained within the site; and
b. outside of the recommended 6m wide fire-trail established as close as possible to the edge of vegetation retained within the site.

There is no requirement to construct dwellings and other structures within the balance of the site to a specific standard pursuant to *AS 3959 – 1999*.

3.3 Access

As shown in Figure 3, the proposed development would incorporate a ring-road design that would enable future residents to access/egress the site via two entry/exit points to the Uki-Kyogle Road.

As previously stated in Section 3.1, additional emergency access would be provided adjacent to potential bushfire hazards in the form of minimum 6m wide fire-trails that would be established within the APZs. These fire-trails would be clearly sign posted, to facilitate navigation by emergency services. Further detail regarding the fire-trails is provided in Section 3.1.

3.4 Water Supply

The proposed development will be serviced by its own reticulated water supply and, as such, residents will not be reliant upon on-site water storage to meet their domestic, including fire fighting/suppression, requirements.

3.5 Landscaping Within the Development

It is recognised that, as part of the proposed development, open space areas within the site are to be landscaped with native flora species. It is also recognised that some future residents of the site may wish to maintain or establish vegetation within areas close to their own dwellings. It is suggested that any landscaping or other establishment of vegetation within the site be undertaken in accordance with "green firebreak" principles, to compliment existing fuel reduced zones and to provide a shield against windborne embers and to absorb radiant energy from approaching bushfires.

The concept of green firebreaks follows the knowledge that species less adapted to drier conditions, and subsequently less frequent fire, have generally higher moisture content, and require larger amounts of energy to dry and ignite. This presents a less flammable barrier to the spread of fire, and can trap burning embers long enough for them to burn-out in the moister vegetation. Conversely, these green firebreaks are usually killed by the fire and may require replacement, depending upon species selected.

While the list of potential species and their most effective arrangement can vary with location, the following general points should be followed.

- Generally, rainforest or scrub species provide the most effective heat-shield.
- Species should be utilised that, when mature, will produce vegetation associations that are equivalent to Vegetation Group 3 (refer Table A2.1 of the RFS Guide) and that will produce ground fuel loads of less than 5 t/ha.
- Avoid the use of exotic species or species with a potential for escape and infestation unless they are to be well maintained and controlled.
- Species endemic to the area should be used as they will not only grow better in local conditions but also may add to the habitat value of the property.
- When planting, avoid creating gaps and tunnels in the break that allow embers to pass through.
- Maintain fuels at ground level to a minimum level to increase the effectiveness of the break.

3.6 General Maintenance

Prior to the onset of the normal bushfire season, which usually extends from September to February, there are a number of general property maintenance actions that landowners should undertake to further reduce the potential for fires to spread within their property. These maintenance actions include:

- Ensuring that any firebreaks are in an appropriate condition.
- Cleaning all gutters and eves regularly, and removing debris from roofs.
- Keeping yards tidy and regularly raking beds and landscaping close to structures clear of fine fuel.
- Checking that any sprinkler or irrigation sprays are working correctly.
- Checking that window shutters and screens fitted to openings are in good repair.
- Making sure that adequate protective clothing (i.e. sturdy boots, overalls, and face-masks to filter heavy smoke) is at hand for use in the event of a fire.
- Ensuring all sheets are securely in place, if the roof is made of sheet metal. If the roof is tiled, ensuring there are no loose tiles and that embers cannot be driven between them.
- Carefully considering the storage of dangerous and flammable materials around the property to guard against ignition during a fire. This includes materials under kitchen and laundry sinks and in cupboards.
- Preparing a list of contingency procedures in the event of a fire and ensuring all household members are familiar with them. Combined, attention to all of the actions recommended above will provide the best available protection against damage from bushfires.

FIGURES

Figure 1 **Aerial Photograph**

Figure 2 **Excerpt from the Tweed Shire Bushfire Prone Land Map 1 of 2**

Figure 3 **Proposed Plan of Development**

Figure 4 **Proposed Bushfire Management Measures**

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Rev: Orig. Date: 15 June 2006

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CAD FILE: I:\3500-53\ACAD\Bushfire Management Plan\Figure 1 - Aerial Photograph.dwg
XREF's

Scale 1:6000 (A4)

FIGURE 1

AERIAL PHOTOGRAPH

Project No.: 3500/53

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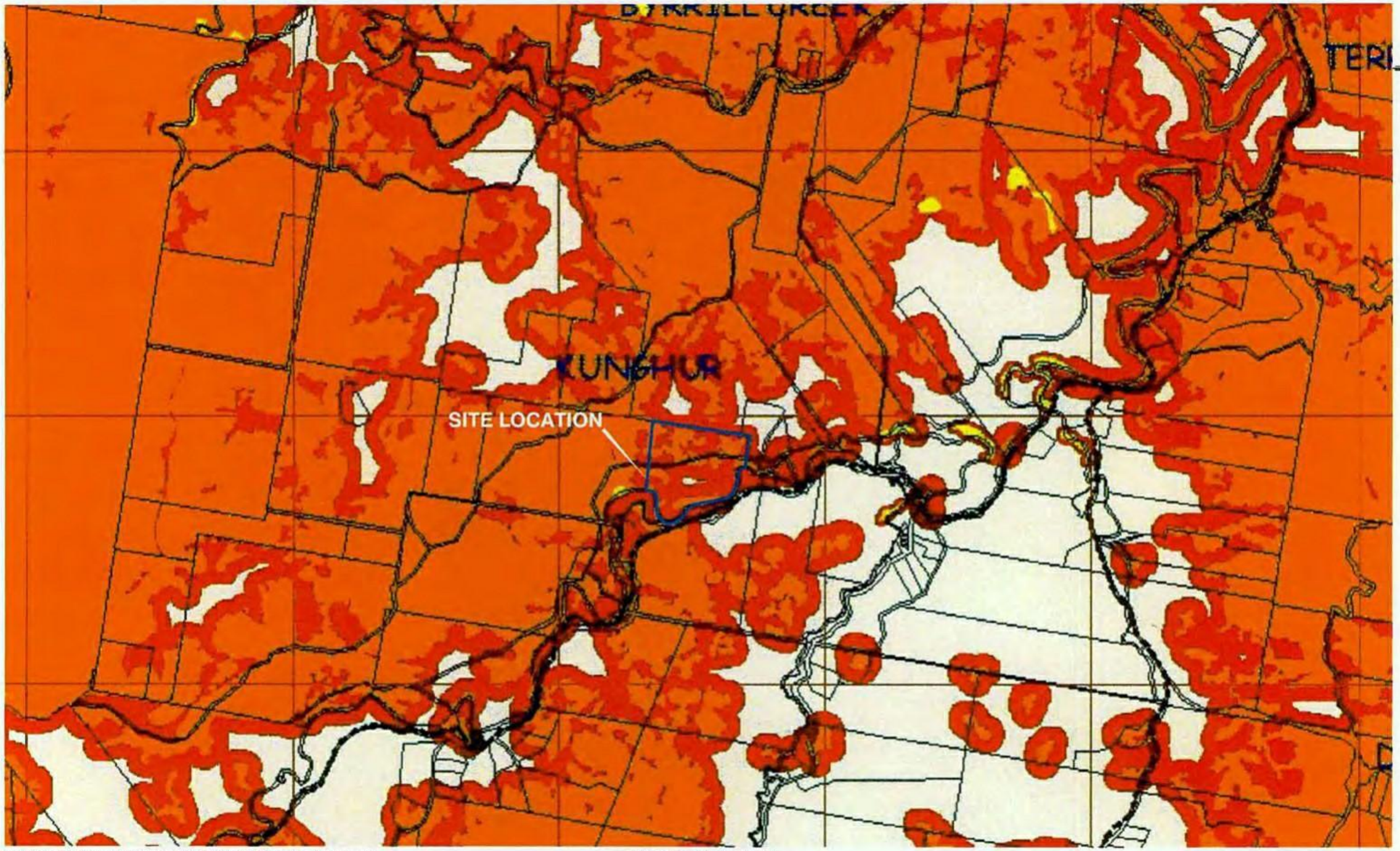

Image Sourced from: Map 1 or 2 Tweed Shire Fire Prone Land Feb 2004 - 'Tweed Shire Council'

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LAD FILE: I:\3500-53\ACAD\Bushfire Management Plan\Figure 2 - Excerpt from the Tweed Shire Bushfire Prone Land Map 1 of 2.dwg
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Bush Fire Prone Land Map - Legend

- Bush Fire Prone Land – Vegetation Category 1
- Bush Fire Prone Land – Vegetation Category 2
- Bush Fire Prone Land – Buffer Zones – 100m and 30m
- Major Roads
- Tweed Shire Boundary
- Property Boundaries

FIGURE 2
EXCERPT FROM THE TWEED SHIRE BUSHFIRE PRONE LAND MAP 1 OF 2

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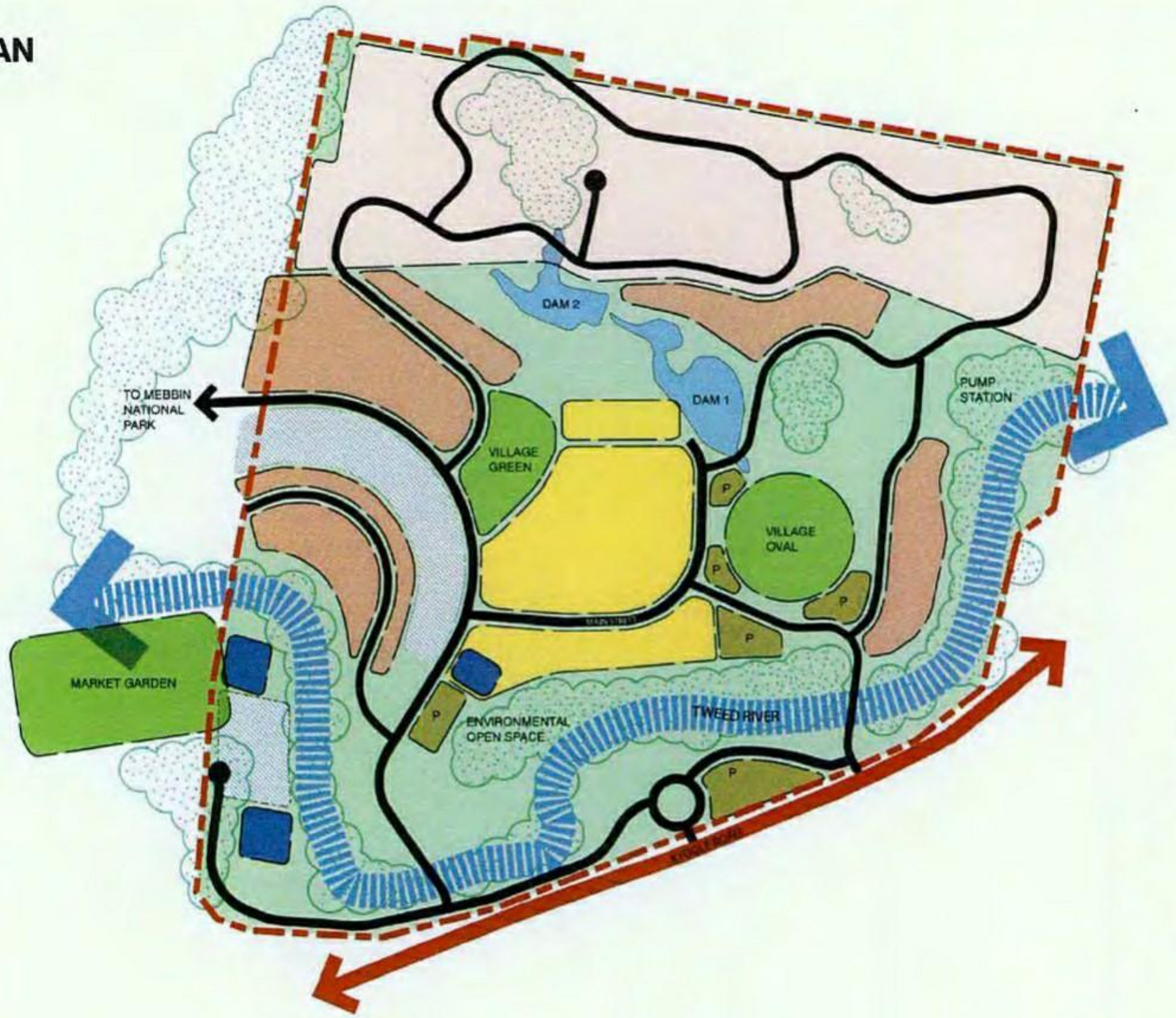
CONCEPT PLAN



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Scale N.T.S

FIGURE 3
PROPOSED PLAN OF DEVELOPMENT

Project No.: 3500/53

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LEGEND

- Cadastral boundaries
- Vegetation Group 1 (within 140m of development boundary)
- Vegetation Group 3 (within 140m of development boundary)
- Vegetation Group 3 (within development)
- 20m Wide APZ setback from Vegetation Group 1
- 20m Wide APZ setback from Vegetation Group 3
- 6m Wide Fire Trail

40 0 40 80 120 160 200m
1:4000

Scale 1:4000 (A3)

FIGURE 4

PROPOSED BUSHFIRE MANAGEMENT MEASURES

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